Laparoscopy with biopsy in patients with tuberculosis peritonitis and immunosuppression

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Background. The purpose of the research was to evaluate the informativeness of laparoscopy with biopsies in the diagnostic of tuberculosis peritonitis in patients with different imomune status.

Methods. We examined 52 patients with tuberculosis peritonitis who were treated in our clinic from 2014 to 2019. 14 (26.9%) of the examined patients were HIV-positive, the number of CD4 lymphocytes did not exceed 350 cells / µl., 3 (5.6%) patients had a history of receiving interleukin inhibitors. The examination included diagnostic laparoscopy (DL), peritoneal fluid analysis and histopathological evaluation of the biopsy sample.

Results. During laparoscopic debridement, exudate in the abdominal cavity was detected in 49 (94.2 ± 3.2%) patients, its volume ranged between 100 and 3000 ml. Caseous-purulent exudate was detected in immune compromised patients only, under minimal expressed adhesive process in the abdominal cavity. Peritoneal fluid analysis showed the growth of mycobacterium tuberculosis (MBT) in 6 (11.5 ± 4.4%) patients. PCR diagnostics of peritoneal exudate reveled MBT DNA in 26 (50.0 ± 11.1%) cases. 5 (9.6±4.1%) patients had local non-specific alterations in the peritoneum in the form of edema, stratification and hyperemia. In 34 (65.4±6.6%) patients, dense whitish tubercles up to 6 mm in diameter were detected on the peritoneum, which imitated the appearance of tumor dissemination **(Fig. 1).** Tuberculous formations on the peritoneum were not detected in patients with compromised immune status **(Fig. 2).** In the group of patients with HIV-negative status, a histopathological assessment of peritoneal biopsy samples revealed typical tuberculous granuloma in 37 cases (71.1 ± 12.3%). Assessment of biopsy samples of the peritoneum revealed accumulations of caseous necrosis without the formation of classical tuberculous granulomas in the majority of immunocompromised patients (13; 25.1 ± 11.7%) **(Fig 3).** Ziehl-Neelsen staining of the tissues detected acid-resistant mycobacterium in 32 (61.5 ± 6.8%) clinical cases **(Fig 4).** Analyzing the data obtained, we can assume that the intraoperative picture can be very variable due to the different stages of the pathological process and the degree of its activity. In patients with compromised immune status were reliably detected predominantly destructive and alterative processes, macroscopic picture shows necrobiotic changes in the peritoneum with the accumulation of caseous effusion, while microscopy revels absence of "classical" tuberculous granulomas, which makes it extremely difficult to verify the diagnosis.

Conclusions. The course of peritoneal tuberculosis in individuals with compromised immune status is characterized by a predominance of destructive processes with the accumulation of caseous and purulent exudate, and signs abdominal sepsis. The unclear clinical picture, low detection rates of MBT in exudate and MBT DNA in PCR diagnostics make it possible to consider the diagnostic laparoscopy with tissue biopsy as the most informative method for the diagnostic of peritoneal tuberculosis, including immunosuppressed patients cases.

Keywords: tuberculosis peritonitis, abdominal tuberculosis, HIV/TB

Fig 1

Fig 2

Fig 3

Fig 4

I have no potential conflict of interest to disclose

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